

# 7SG22 Iota

Input / Output Units

## Document Release History

This document is issue 2010/02. The list of revisions up to and including this issue is:  
Pre release

2010/02	Document reformat due to rebrand

## Software Revision History

--	--	--

The copyright and other intellectual property rights in this document, and in any model or article produced from it (and including any registered or unregistered design rights) are the property of Siemens Protection Devices Limited. No part of this document shall be reproduced or modified or stored in another form, in any data retrieval system, without the permission of Siemens Protection Devices Limited, nor shall any model or article be reproduced from this document unless Siemens Protection Devices Limited consent.

While the information and guidance given in this document is believed to be correct, no liability shall be accepted for any loss or damage caused by any error or omission, whether such error or omission is the result of negligence or any other cause. Any and all such liability is disclaimed.

## Contents

1.	Commissioning .....	3
2.	Inspection .....	3
3.	Applying Settings .....	3
4.	Precautions .....	3
5.	Tests .....	3
6.	Putting Into Service .....	4

## 1. Commissioning

### 1.1 Required Test Equipment

1000V Insulation resistance test set.

A d.c. supply with nominal voltage within the working range of the relays d.c. auxiliary supply rating.

A d.c. supply with nominal voltage within the working range of the relays d.c. input rating.

Additional equipment for testing the communications channel:

Portable PC with fibre optic modem, or RS232 connections.

## 2. Inspection

Ensure that all connections are tight and in accordance with the relay wiring diagram and the scheme diagram. Check the relay is correctly programmed and fully inserted into the case. Ensure a working ReyLogiC scheme has been loaded and the description appears in the identifier screen.

## 3. Applying Settings

The relay settings for the particular application should be applied before any secondary testing occurs.

Ensure the version of logic scheme in the relay is the same as the schematic diagram. This can be viewed in the instrumentation menu.

Note the input and output relays must be programmed correctly before any scheme tests are carried out.

IOTA relays feature two alternative settings groups. In applications where more than one settings group is to be used then it may be necessary to test the relay in more than one configuration.

When using settings groups it is important to remember that the relay need not necessarily be operating according to the settings which are currently being displayed. There is an "active settings group" on which the relay operates and an "edit/view settings group" which is visible on the display and which can be altered. This allows the settings in one group to be altered while the protection continues to operate on a different unaffected group. This "active settings group" and the "edit settings group" are selected in the "System Configuration Menu".

Elsewhere in the settings menu system, those settings which can be altered for different groups are indicated by the symbols G1, G2 etc in the top left of the display. Other settings are common to all groups.

## 4. Precautions

Ensure that the correct d.c. supply voltage and polarity is applied. See the relevant scheme diagrams for the relay connections.

## 5. Tests

### 5.1 Insulation

Connect together the terminals of the DC auxiliary supply circuit and measure the insulation resistance between these terminals and all of the other relay terminals connected together and to earth.

Connect together the terminals of the DC status input circuits and measure the insulation resistance between these terminals and all of the other relay terminals connected together and to earth.

Connect together the terminals of the output relay circuits and measure the insulation resistance between these terminals and all of the other relay terminals connected together and to earth.

Satisfactory values for the various readings depend upon the amount of wiring concerned. Where considerable multi-core wiring is involved a reading of 2.5 to 3.0 Megaohms can be considered satisfactory. For short lengths of wiring higher values can be expected. A value of 1.0 Megaohm or less should not be considered satisfactory and should be investigated.

Remove temporary connections.

### 5.2 Functional Testing

Configure the status input and output relays to the requirements of the schematic diagrams.

The IOTA range is equipped with comprehensive self testing routines which automatically check correct initialisation and processing operation. The "Protection Healthy" LED is under software control and if, after application of the correct DC supply, it gives a steady light this is an indication that the relay is functioning correctly. A flashing LED, or no LED light indicates faulty equipment or no dc supply present. As there are no user serviceable components in the withdrawable modules, faulty relays must be returned to the nearest Reyrolle Service Centre or area office.

Each status input should be energised in turn and checked for correct operation with the fascia.

Check the operation of each output relay by selecting it in the "Test Plant Control" setting.

The tests described above will prove the correct operation of the relay hardware and basic interface software. To prove the ReyLogiC scheme it will be necessary to perform a simulation test with auxiliary equipment to mimic the controlled plant.

## **6. Putting Into Service**

Remove the external test connections and test plugs

Check that the d.c. supply fuses and links are inserted.

Check that all the relay settings are as recommended.

Test and reset the LED indication display

Replace the relay cover

Insert the trip links where fitted